

CLAIMS

What is claimed is:

- 1 1. A method of establishing a network resources reservation for an anticipated traffic
2 flow along a path in a network between an anticipated source and an anticipated
3 receiver of the traffic flow, wherein the anticipated receiver otherwise cannot
4 facilitate establishing the network resources reservation, the method comprising
5 the steps of:
6 detecting an RSVP Path message associated with the anticipated receiver of the
7 anticipated traffic flow at a proxy node located within the path;
8 determining whether to establish the network resources reservation;
9 generating an RESV message to reserve network resources for the anticipated
10 traffic flow; and
11 communicating the RESV message to the anticipated source of the anticipated
12 traffic flow.
- 1 2. A method as recited in claim 1, further comprising the step of determining one or
2 more device and traffic parameter values associated with the anticipated traffic
3 flow, and wherein the step of generating the RESV message comprises the step of
4 generating the RESV message based on at least one of the device and traffic
5 parameter values.
- 1 3. A method as recited in claim 1, further comprising the steps of:
2 receiving predefined policy information;
3 generating the RESV message based on the predefined policy information.
- 1 4. A method as recited in claim 1, wherein the step of determining whether to initiate
2 an RSVP reservation process includes the steps of:
3 determining one or more network parameter values associated with the anticipated
4 traffic flow;

5 determining one or more transport parameter values associated with the
6 anticipated traffic flow;
7 determining next and previous hop parameter values associated with the
8 anticipated traffic flow; and
9 correlating at least one of the ascertained network parameter, transport parameter,
10 next hop parameter, and previous hop parameter values with information
11 defining a relationship between them and whether a RESV message is
12 desired.

1 5. A method as recited in claim 4, wherein determining the network parameter values
2 and ascertaining the transport parameter values includes the steps of determining
3 at least one of the source and receiver IP addresses, source and receiver port
4 numbers, and transport protocol based on values carried in objects in the RSVP
5 Path message.

1 6. A method as recited in claim 4, wherein determining the anticipated traffic flow
2 characteristics includes determining at least one of the rate and size of packets
3 associated with the anticipated traffic flow.

1 7. A method as recited in claim 4, further comprising the steps of extracting one or
2 more additional anticipated traffic flow attributes from the RSVP Path message.

1 8. A method as recited in claim 7, wherein the anticipated receiver is an IP phone,
2 and further comprising the step of determining at least one quality of service
3 parameter associated with the anticipated traffic flow.

1 9. A method as recited in claim 1, further comprising the steps of:
2 communicating the RESV message along at least a subset of an anticipated path
3 defined, at least in part, by the RSVP Path message;
4 receiving the RSVP Path message at one or more devices along the anticipated
5 path.

1 10. A method as recited in claim 1, wherein the step of detecting an RSVP Path
2 message comprises the step of detecting an RSVP Path message associated with
3 the anticipated receiver of the anticipated traffic flow at a proxy node that is
4 logically positioned adjacent to the path.

1 11. A computer readable medium comprising one or more sequences of instructions
2 for facilitating an RSVP reservation process, for an anticipated traffic flow
3 anticipated to be received by an anticipated receiver that cannot facilitate an RSVP
4 reservation process for the anticipated traffic flow, wherein when the instructions
5 are executed by one or more processors, the instructions cause the one or more
6 processors to carry out the steps of:
7 detecting an RSVP Path message associated with the anticipated receiver of the
8 anticipated traffic flow at a proxy node located within the path;
9 determining whether to establish the network resources reservation;
10 generating an RESV message to reserve network resources for the anticipated
11 traffic flow; and
12 communicating the RESV message to the anticipated source of the anticipated
13 traffic flow.

1 12. A computer-readable medium as recited in claim 11, further comprising the step of
2 determining one or more device and traffic parameter values associated with the
3 anticipated traffic flow, and wherein the step of generating the RESV message
4 comprises the step of generating the RESV message based on at least one of the
5 device and traffic parameter values.

1 13. A computer-readable medium as recited in claim 11, further comprising the steps
2 of:
3 receiving predefined policy information;
4 generating the RESV message based on the predefined policy information.

1 14. A computer-readable medium as recited in claim 11, wherein the step of
2 determining whether to initiate an RSVP reservation process includes the steps of:
3 determining one or more network parameter values associated with the anticipated
4 traffic flow;
5 determining one or more transport parameter values associated with the
6 anticipated traffic flow;
7 determining next and previous hop parameter values associated with the
8 anticipated traffic flow; and
9 correlating at least one of the ascertained network parameter, transport parameter,
10 next hop parameter, and previous hop parameter values with information
11 defining a relationship between them and whether a RESV message is
12 desired.

1 15. A computer-readable medium as recited in claim 14, wherein determining the
2 network parameter values and ascertaining the transport parameter values includes
3 the steps of determining at least one of the source and receiver IP addresses,
4 source and receiver port numbers, and transport protocol based on values carried
5 in objects in the RSVP Path message.

1 16. A computer-readable medium as recited in claim 14, wherein determining the
2 anticipated traffic flow characteristics includes determining at least one of the rate
3 and size of packets associated with the anticipated traffic flow.

1 17. A computer-readable medium as recited in claim 14, further comprising the steps
2 of extracting one or more additional anticipated traffic flow attributes from the
3 RSVP Path message.

1 18. A computer-readable medium as recited in claim 17, wherein the anticipated
2 receiver is an IP phone, and further comprising the step of determining at least one
3 quality of service parameter associated with the anticipated traffic flow.

- 1 19. A computer-readable medium as recited in claim 11, further comprising the steps
2 of:
3 communicating the RESV message along at least a subset of an anticipated path
4 defined, at least in part, by the RSVP Path message;
5 receiving the RSVP Path message at one or more devices along the anticipated
6 path.
- 1 20. A computer-readable medium as recited in claim 11, wherein the step of detecting
2 an RSVP Path message comprises the step of detecting an RSVP Path message
3 associated with the anticipated receiver of the anticipated traffic flow at a proxy
4 node that is logically positioned adjacent to the path.
- 1 21. A system for establishing a network resources reservation for an anticipated traffic
2 flow along a path in a network between an anticipated source and an anticipated
3 receiver of the traffic flow, wherein the anticipated receiver otherwise cannot
4 facilitate establishing the network resources reservation, the system comprising:
5 means for detecting an RSVP Path message associated with the anticipated
6 receiver of the anticipated traffic flow at a proxy node located within the
7 path;
8 means for determining whether to establish the network resources reservation;
9 means for generating an RESV message to reserve network resources for the
10 anticipated traffic flow; and
11 means for communicating the RESV message to the anticipated source of the
12 anticipated traffic flow.
- 1 22. A network device that can establish a network resources reservation for an
2 anticipated traffic flow along a path in a network between an anticipated source
3 and an anticipated receiver of the traffic flow, wherein the anticipated receiver
4 otherwise cannot facilitate establishing the network resources reservation, the
5 network device comprising:

6 a network interface;
7 a processor coupled to the network interface and receiving network messages from
8 the network through the network interface;
9 a computer-readable medium comprising one or more stored sequences which,
10 when executed by the processor, cause the processor to carry out the steps
11 of:
12 detecting an RSVP Path message associated with the anticipated receiver
13 of the anticipated traffic flow at a proxy node located within the
14 path;
15 determining whether to establish the network resources reservation;
16 generating an RESV message to reserve network resources for the
17 anticipated traffic flow; and
18 communicating the RESV message to the anticipated source of the
19 anticipated traffic flow.